

COMPATIBILITY DETERMINATION

Use: Vaccination of Calf and Cow Elk Using Strain 19 for an Interim Period (for no more than 3 years), by the Wyoming Game and Fish Department

Refuge Name: National Elk Refuge, Teton County, Wyoming

Refuge Purpose(s) and Establishing and Acquisition Authority(ies):

“...the establishment of a winter game (elk) reserve...” 37 Stat. 293, dated Aug. 10, 1912

“For the establishment and maintenance of a winter elk refuge in the State of Wyoming...” 37 Stat. 847, dated March 4, 1913

“... all lands that now are or may hereafter be included within the boundaries of ...the Elk Refuge, Wyoming, ...are hereby further reserved and set apart for the use of the Department of [Interior] as refuges and breeding grounds for birds” Executive Order 3596, dated Dec. 22, 1921

“...for the use of the Secretary of [the Interior] as a refuge and breeding grounds for birds...” Executive Order 3741, dated September 20, 1922

“...for grazing of, and as a refuge for, American elk and other big game animals...” 44 Stat. 1246, dated Feb. 25, 1927

“...for the development, advancement, management, conservation, and protection of fish and wildlife resources...” (Fish and Wildlife Act of 1956)

“...suitable for— (1) incidental fish and wildlife-oriented recreational development. (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 USC 460k-1 (Refuge Recreation Act of 1962)

National Wildlife Refuge System Mission:

The Refuge System Mission is “to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Administration Act of 1966, as amended [16 U.S.C. 668dd-668ee]).

Description of Use:

The Wyoming Game and Fish Department (WGFD) has proposed to conduct a brucellosis vaccination program for elk on the NER (WGFD 2002). The proposed use is not a priority public use as defined in the National Wildlife Refuge System Administration Act (16 U.S.C. 668dd). As part of the program, the WGFD would administer Strain 19 vaccine to elk calves and cows early in the feeding season before extensive exposure to field strain *Brucella abortus* occurs. Each year of the interim program would be conducted in two phases: acclimation and vaccination. If approved, implementation of the proposed action would begin soon after winter feeding is initiated in the winter of 2002-2003. The interim vaccination program would continue through the winter of 2004-2005, unless the record of decision for the NER and Grand Teton National Park Bison (GTNP) and Elk Management Plan Environmental Impact Statement (BEMP EIS) is signed before then, at which time

direction provided in the selected alternative of the BEMP EIS would guide brucellosis management on the NER. Vaccination procedures would be carried out as described below.

Feeding Operations. Feeding operations on the NER would continue to be conducted as they have in the past, with the following exceptions. To facilitate the vaccination operation, feedlines would be spaced somewhat further apart than currently practiced. Feedlines would be spaced up to 50 yards apart to provide a maximum shooting range of 25-30 yards when the vaccination team drives the over-the-snow vehicle between feedlines. If any adjustments to the feeding protocol are needed to increase the successful vaccination of calves and cows, the USFWS and WGFD would work together to determine the best course of action. No significant changes to feeding operations would be undertaken. Adjustments would not be made that would adversely affect the elk. Long hay would not be used.

The approval of the WGFD's proposal to vaccinate on the NER would not affect the USFWS's decisions, in cooperation with the WGFD, in a given winter related to (1) when to begin winter feeding, (2) how long feeding is conducted (number of days in a given winter), or (3) whether feeding is carried out or not carried out in a given winter.

Vehicle. The WGFD would use a tracked over-the-snow vehicle (LMC 1500 Beartrac or equivalent) to follow feed trucks during feeding operations to acclimate elk and to provide a vehicle from which to administer the vaccine. The WGFD owns one Beartrac vehicle. If WGFD rents a second oversnow vehicle or secures access to another oversnow vehicle, then two teams would vaccinate elk. The WGFD and USFWS would work together in determining the best vehicle to use. The vehicle combination that disrupts feeding operations the least, disturbs elk the least, and provides the most effective platform to shoot from would be used.

Acclimation. Elk would be allowed to become accustomed to normal winter feeding operations. This would also allow calves to fully participate in the feeding program as they usually require a week to become accustomed to the feeding equipment and routine.

Beginning soon after the onset of supplemental feeding, WGFD technicians would begin to acclimate elk to the presence of the Beartrac vehicle, the two-person team (one to drive the vehicle and one to vaccinate), the report of an air-gun, and other sounds and actions associated with vaccination. Guns (vaccine and paintball) would be dry-fired at varying velocities to acclimate elk to the report of the gun as the support vehicle passes along the feedlines. Devices that sound similar to the vaccination equipment might be used during initiation of the acclimation period.

At the beginning of the acclimation period, acclimation activities would be carried out while feed trucks are dispensing pellets. Ideally, acclimation activities would be performed at two feeding sites each day. As the animals become accustomed to the presence of the support vehicle, two-person team, and the vaccination guns, the vehicles would spend progressively longer amounts of time in the vicinity of the feedlines and closer to the elk. Detailed notes on elk behavior would be recorded during the acclimation process. The acclimation period could require from several hours up to several weeks. Due to the unknown response of elk, the duration of the acclimation period cannot be predicted at this time. The determination of when to cease the acclimation period and begin vaccinating would be somewhat subjective, but would require elk to remain within 50-75 feet of the support vehicle as it passes along a feedline and occasionally comes to a stop.

Vaccination of Elk. Vaccination would begin when the WGFD determines that elk are sufficiently acclimated to the two-person team, additional vehicle, and discharge of firearms and that elk would remain within 50-75 feet of vehicle holding the two-person team. The protocol for vaccination would mimic that for acclimation of elk except that (1) an air-powered biobullet gun would be used to ballistically inject biobullet containing approximately 5.3×10^9 colony-forming units of freeze-dried Strain 19 vaccine, and (2) an air-powered paintball gun would be used to mark each vaccinated animal with an oil-based paint to ensure that it is not vaccinated more than once.

The support vehicle would continue to be operated the same way it was operated during the acclimation period, which includes occasional stops. Ideally, two vaccination teams would be used so that vaccination could be carried out at two or more feeding sites each day. Vaccination would target juvenile elk at each of the four feeding sites, but would also include adult female elk. Adult cow elk would also be vaccinated to more quickly increase the number of animals in the population that are vaccinated with Strain 19.

During the first few winters of the program, an attempt would be made to vaccinate at least 80% of elk calves, and possibly as many as 50% or more of the adult female elk. This means that approximately 1,200 calves and 2,000 cows (or, a total of about 3,200 elk) would have to be vaccinated each year. The time required to complete vaccination in a given winter cannot be predicted due to the unknown response of elk on the NER. In 2002, the average vaccination time on state feedgrounds was 20 calves per hour (range: 7-57).

Timing and Duration of the Use. The proposed use would be conducted simultaneous with winter feeding activities that generally begin in January or February and continue through April.

Location of the Use. Vaccination of elk would be carried out in the same locations that winter feeding is conducted on the NER, which encompass three habitat types: cultivated fields, grasslands, and sagebrush. Plant communities within these habitat types are described in the environmental assessment. Any changes in elk or bison behavior resulting from vaccination activities or adjustments in winter feeding to accommodate vaccination could also potentially affect vegetation in other habitat types such as riparian and deciduous woodlands (e.g., willow, aspen, and cottonwood) and wet meadows that are found near feeding sites. Riparian and deciduous woodland habitat is currently in a degraded condition due to decades of overbrowsing by elk and more recently by bison.

Besides elk, bison are the only other wildlife species that feed at feedlines. Other wildlife species that can be found in or near feeding areas include coyotes, bald eagles, golden eagles, common ravens, common crows, and black-billed magpies. These species scavenge on elk and bison carcasses. Occasionally, grey wolves visit the NER and have been observed to kill elk.

Typical bird species that nest in riparian and deciduous woodland habitats are Lincoln's sparrows, MacGillivray's warblers, orange-crowned warblers, black-headed grosbeaks, and lazuli buntings. Wet meadows and associated wetlands are important for trumpeter swans, Canada geese, mallards, green-winged teal, gadwalls, American widgeons, common and Barrow's goldeneyes, common mergansers, greater sandhill cranes, and a variety of shorebirds and other birds.

Reason for the Use. The WGFD's purpose in proposing the brucellosis vaccination program is to increase coverage and protection of feedground elk in northwestern Wyoming. The WGFD vaccination program currently is carried out annually on 21 WGFD feedgrounds in northwestern Wyoming. The NER is only one of two winter feedgrounds in Wyoming where elk are not vaccinated. The WGFD believes that vaccinating elk on the NER will enhance immunity and reduce the risk of transmission of brucellosis by reducing abortions caused by brucellosis. Elk overwintering on the NER cannot be vaccinated outside of the NER at this time.

This environmental assessment is being carried out pursuant to the settlement agreement entered into between the USFWS and the State of Wyoming in the case entitled *Wyoming v. United States et al.*, Docket No. 98-CV-037B, which requires the USFWS to perform a compatibility determination and complete an environmental assessment concerning Wyoming's proposed elk vaccination program for the NER.

Availability of Resources:

It is estimated that costs to administer the WGFD interim elk vaccination program would mostly be salaries and that it would increase the cost of the winter feeding program by about 3%, or \$2,100.

Additional staff time would be spent communicating with WGFD Project Biologists and staff in Cheyenne to ensure close coordination and to work out any disputes, writing and filing out forms related to special use permitting, administering records, monitoring vaccination activities and ensuring that agreed-upon protocol is followed and that stipulations are being met, monitoring elk/bison responses, working with media (in cooperation with WGFD), and providing briefings and updates to regional and Washington offices. Not included in these expenses are the cost of preparing the environmental assessment, compatibility determination, biological assessment, and any costs that would be needed for travel to Cheyenne, Wyoming to meet with WGFD staff.

Anticipated Impacts of the Use:

The potential impacts of implementing WGFD's brucellosis vaccination program on an interim basis on the NER are described in the *Environmental Assessment for the Implementation of the Wyoming Game and Fish Department's Proposed Interim Brucellosis Vaccination Program for the National Elk Refuge* (USFWS 2002). Depending on pertinence, information from the environmental assessment was either repeated or summarized.

The following assessment of impacts only addresses the direct and indirect effects of the proposed vaccination program and does not evaluate in detail the cumulative effects of the proposed program in conjunction with other elk management activities (e.g., winter feeding), as the assessment of direct, indirect, and cumulative effects of vaccination and other elk management activities is being done as part of the NER and GTNP bison and elk management plan/EIS process.

Habitat

Although slight alterations may be made to feeding operations to accommodate the vaccination program (e.g., increasing the distance between feedlines), none of the changes would affect cultivated fields, grasslands, and sagebrush habitat where alfalfa pellets would be distributed and where vaccination procedures are conducted. At a maximum, negligible, unmeasurable changes would occur to these habitats.

If vaccination activities cause elk to move away from feedlines more than what they would do in the absence of vaccination, a negligible to minor increase in browsing by elk could take place on the days that elk are disturbed. However, by the end of the feeding season, these potential impacts would be diminished because elk likely consume all or nearly all accessible woody shoots in the vicinity of feedgrounds by the end of the winter feeding season. The condition of woody vegetation close to feedgrounds is already in degraded condition (Anderson 2002, Cole 2002, Dobkin et al. 2002).

Elk Population

Behavior and Social Interactions. Although it is possible that vaccination activities would result in no noticeable changes in elk behavior or interactions, it is more likely that vaccination activities would have at least some effect on elk behavior. However, major recurring or long-lasting impacts would not be anticipated because a stipulation of this compatibility determination is that changes would be made immediately to the vaccination program to avoid this level of impact.

Elk response to an additional vehicle and the activities associated with vaccination (e.g., starting and stopping of the vaccination vehicle, firing air guns) could vary on a daily basis, from negligible effects to elk leaving the vicinity of the feeding area where vaccination is taking place. Negligible and minor level effects would include animals flinching after being hit by a biobullet or paintball or in response to other activities associated with vaccination, a small numbers of animals rushing away from the feedline soon followed by a return to the feedline, and minor scuffling among elk. These types of effects would be expected to be normal and regular occurrences during the vaccination period.

Occasionally, major, short-duration effects could result from the presence or stopping and starting of the oversnow vaccination vehicle, changes in the vaccination vehicle relative to the feed trucks (e.g., increased distance between the two), human movements, the firing of air guns, being hit with a biobullet or paintball, and the sight of one or more elk being slightly alarmed in response to these stimuli. Major effects include the movement of large numbers or all animals away from a particular feeding area, escalated aggression among elk that leads to fighting resulting in serious injury or death, and aggressive interactions between elk and bison (B. Smith, Wildl. Biologist, NER, pers. comm., 2002). Increased aggression could occur if elk from one part of a feedline quickly move away and then converge on another part of the feedline already occupied by elk.

It is not anticipated that the additional time would be added to the process of dispensing alfalfa pellets. This is because substantial increases in the amount of time it takes to dispense alfalfa pellets could result in increased aggression among elk and increased aggression could escalate to major, short-duration effects such as fighting among some elk. Such fighting could potentially lead to injuries or death.

Effects of Brucellosis in Elk. Strain 19 would provide some level of protection against brucellosis-induced abortion and infection in elk (Thorne et al., 1981, Herriges et al., 1989, Roffe et al. 2002) and could potentially result in a slight, likely unmeasurable reduction in seroprevalence of brucellosis in NER elk following a few years of vaccination (e.g., 3 years). It is also possible that other factors influencing seroprevalence could result in an increase in seroprevalence during this time (B. Smith, Wildl. Biologist, NER, pers. comm., 2002). The environmental assessment provides details on research conducted on Strain 19, but a summation of implications to the NER are as follows:

Assuming that (1) 80% of calves are successfully vaccinated, (2) none of the calves have had previous exposure to *Brucella* organisms, and (3) a 25% efficacy with respect to protection against abortion, Strain 19 may result in 20% of NER calves being protected against abortion related to brucellosis. If 50% of the calves are successfully vaccinated, this would result in an estimated 13% of the calves being protected against infection and abortion. In the WGFD's 1989-1991 experimental vaccination program on the NER, 45% of NER calves were hit by Strain 19 biobullets.

Assuming that (1) 50% of all NER cows are successfully vaccinated, (2) 73% of adult cow elk had not been previously exposed to *Brucella* organisms (assuming that 27% of the cows are already infected, based on the 10-year average 27% seroprevalence rate) and (3) a 25-30% efficacy with respect to protection against infection and abortion, Strain 19 may result in 9-11% of NER cows being protected against infection and abortion related to brucellosis. If only 25% of the cows are vaccinated, this would result in an estimated 5-6% of the cows being protected against infection and abortion. In 1989-1991, 4% of NER cows were hit by Strain 19 biobullets.

There are a number of assumptions listed in the environmental assessment with respect to assumption '3' in both paragraphs above, and if these assumptions are not met, efficacy of Strain 19 in field conditions may be higher or lower than clinically measured efficacy.

Even if the proposed vaccination program resulted in measurably lower levels of seroprevalence of brucellosis in NER elk, this must be considered in the context of how vaccination-induced reductions in seroprevalence relate to the mission of the NWRS. As an exotic disease introduced by livestock, brucellosis has negative effects on elk such as abortion, arthritis, lameness, and synovitis (Thorne et al. 1978). Therefore, even though these effects do not pose biologically significant problems to elk overwintering on the NER (Smith and Robbins 1994), a reduction in the prevalence of brucellosis in elk on the NER, in and of itself, would contribute to the mission of the NWRS. However, this contribution would be minimal because reducing the seroprevalence of brucellosis in NER elk through vaccination does not address the underlying problems that allow the disease to flourish. While brucellosis may not be a biologically significant problem to elk wintering on the NER, the high prevalence of brucellosis in NER elk is an indicator that the conditions experienced by these elk are

optimum for the transmission of other, more pathogenic diseases (Smith 2001). The underlying problems that sustain high transmission rates of diseases (and other problems) were investigated in a problem analysis that was conducted by the BEMP EIS interagency working group (DeLong 2001).

Mortality, Calf Production, and Numbers of Elk. It is possible that the incidence of gorings by bull elk or bison could increase slightly above the current level. Although not anticipated, it is possible that a small number of fatalities could result from disturbances described in the previous section and from elk cows and calves being hit with biobullet. Of the 2,272 elk that were vaccinated during 1989-1991, only 2-5 (less than 0.2%) may have died due to complications associated with biobullet vaccination (Wilbrecht 1989). It is not anticipated that the administration of Strain 19 would make elk more susceptible to predation or other causes of mortality, aside from factors described above. Therefore, any increases in mortality would be minimal.

Assuming that 100% of calves and cows have been vaccinated by the third year of the vaccination program and that Strain 19 is 25% effective in calves and cows vaccinated on the NER, it is estimated that up to 10 additional calves would be recruited into the February population that year and up to 34 fewer abortions would occur that year (see the environmental assessment for details on how the estimates were calculated and for assumptions). If fewer than 100% of the female elk have been vaccinated by the third year, proportionally fewer calves would be recruited into the February population. Thorne et al. (1978) and Herriges et al. (1989) reported that 50-70% of cow elk infected with brucellosis lose their first calf. After aborting the first calf, calf production is not affected appreciably (Thorne et al. 2002). This means that the effects of vaccinating elk on the NER 2003-2005, in terms of impacts on calf production, would occur during 2005-2007, assuming that female elk are first bred at age 2-1/2 and capable of producing their first calf at 3 years of age (Smith and Robbins 1994). An additional 10 calves being recruited into the February population each year would have negligible effects on the population (e.g., less than a 0.1% increase each year).

Other Wildlife Species

The following assessment of potential effects on other wildlife species is done as a group, except for potential disturbance effects on bison, because potential habitat and biosafety effects are similar among groups of species.

Disturbance to Bison. Vaccination procedures, including the use of an additional vehicle, firing air guns, and the effects this has on elk could result in behavior changes in bison, ranging from negligible to major, short-duration impacts. When calf and cow elk are being vaccinated on feedlines that are also occupied by bison, bison could become startled by the starting and stopping of the vaccination vehicle, report of the air gun, reactions of elk to these factors or to being hit with a biobullet or paintball, or other movements and sounds. It is anticipated that, in most instances, bison that are disturbed would immediately resume feeding. However, it is possible that on occasion the disturbance might elicit a flight response in bison, especially during the acclimation period. The most severe response would be for small to large numbers of bison to leave a feeding area temporarily or it is possible that they may move to another feeding area (B. Smith, Wildl. Biologist, NER, pers. comm., 2002).

During the last several years, bison on the NER have been approached with a Thoikol (oversnow vehicle) and, because some bison have been shot with tranquilizer guns, many bison now appear to associate the Thoikol with danger. In many cases, the approach of a Thoikol elicits a flight response in bison (B. Smith, Wildl. Biologist, NER, pers. comm., 2002). This may make it difficult for similar oversnow vehicles, such as the one proposed for use by WGFD in vaccination activities, to approach feeding areas occupied by bison without having bison run away. Because bison reaction to the oversnow vaccination vehicle could elicit a response in elk, this could add to the acclimation period on one or two feeding areas.

Effects due to Habitat Alterations. Because implementation of the proposed vaccination program on an interim basis would likely not result in any measurable or noticeable changes to habitat conditions (see discussion on habitat impacts, above), no changes in population levels, densities, productivity, or other parameters of ungulate, bird, predator, and scavenger species would be anticipated due to possibly slight alterations to habitat conditions.

Effects due to Changes in Elk and Bison Distribution and Mortality. Because the Proposed Action would have negligible lasting effects on elk and bison distribution — the vaccination program would be changed before this happened — any changes in distribution would not be large enough to result in anything more than negligible effects on wildlife species that could be affected by changes in distribution.

As noted in the Elk Population section, vaccination activities and possible adjustments to winter feeding operations could potentially cause elk and/or bison to move from one feeding area to adjoining habitat (temporarily) or to another feeding area. However, changes would be made to the Proposed Action to minimize the extent to which any such disturbances recur. Furthermore, NER staff would immediately move a portion of the animals from the feeding area that gained animals to the feeding area that lost animals (i.e., any changes in distribution would be temporary).

The negligible to minor increase in mortality, due to such things as gorings by bull elk and bison and mortality caused by complications resulting from biobullets, would add to the food base of scavengers such as coyotes, bald and golden eagles, common ravens, common crows, and black-billed magpies. Because the mortality rate on the NER is relatively low (e.g., an average of about 1½%), even a slight increase in elk carcasses would noticeably add to the food base of scavengers. Conversely, the number of aborted fetuses would decline for a period of 3-4 years, but this would be a negligible impact. No lasting measurable effects would be anticipated due to potential changes in the mortality rate of elk on the NER.

Likewise, the anticipated negligible increases in calf recruitment and population growth would have no measurable effect on the food base of wolves, grizzly bears, and mountain lions in other parts of the Jackson elk herd unit.

Safety of Strain 19 in Wildlife other than Elk. Roffe and Olsen (2002:53) noted that “Despite the fact that S19 has been widely used in bison, very little research has been done on biosafety of this vaccine in bison and non-targeted wildlife species. Nevertheless, S19 vaccine was used extensively in calves and there were no widespread reports of adverse effects from commercial bison producers.” Cook and Rhyen (2002:63) noted that “No clinical trials have been conducted specifically examining the safety of S19 in non-target wildlife. However, field experience suggests that S19 is safe in many species of non-target wildlife” (see environmental assessment for more detail).

Threatened, Endangered, and Sensitive Species

The effects of the Proposed Action on the most likely threatened and endangered species to be affected (e.g., grey wolves and grizzly bears) have already been described (see the previous section, Other Wildlife Species). The Proposed Action would have negligible, if any, effects on threatened, endangered, and sensitive species as a consequence of temporary changes in elk and bison distributions, negligible changes in calf recruitment and mortality rates. No adverse effects of using Strain 19 to vaccinate elk, bison, and cattle on wolves or grizzly bears or other threatened species have been reported.

Biological Diversity and Biotic Integrity

Because the negligible to minor effects that the Proposed Action would have on elk and other wildlife species, which would translate to negligible if any effects on population sizes, disease prevalence in

NER elk, and long-lasting changes in habitat use and distribution, there would not be any measurable effects on biological diversity or biotic integrity on the NER and surrounding lands.

One exception to this is that vaccinating elk using *Brucella abortus* Strain 19 would increase the prevalence (relative abundance) of this strain of an exotic species in the NER area. However, because elk in the Gros Ventre River drainage and areas south of Jackson are being vaccinated annually with Strain 19, this strain of *Brucella abortus* is already prevalent in elk of the Jackson herd unit.

Wildlife-Dependent Recreational Opportunities on the NER Associated with Elk

The vaccination of elk would not begin until well after the close of the hunting season for elk on the NER. Therefore, any temporary shifts in distribution resulting from vaccination activities would not affect hunting opportunities. Effects of the vaccine program on calf production and recruitment could have negligible, if any, effects on NER hunting opportunities. Likewise, viewing opportunities during most of the year would not be measurably affected.

If vaccination activities do not result in elk vacating the Nowlin feeding area, potential effects on NER sleigh rides would be nonexistent to minor, except that (1) vaccination activities at the Nowlin feeding area could provide morning sleigh ride participants an opportunity to be educated about brucellosis in the Greater Yellowstone area and WGFD's brucellosis management program and, conversely, (2) large numbers of calves and cows marked with paint could detract from the viewing experience and photographic opportunities for some people, especially since elk are viewed and photographed at close range from sleighs.

If large numbers or all elk using the Nowlin feeding area vacate the area due to vaccination activities or adjustments to feeding protocol, sleigh ride operations would stop for the day. This would reduce viewing opportunities for people visiting Jackson Hole on that particular day, would result in fewer opportunities for the NER to educate visitors about elk and wildlife conservation. Assuming that an average of 225 visitors ride the sleighs each day (J. Griffin, Assistant Refuge Manager, NER, pers. comm., 2002), each day that the sleigh rides are not in operation means that an estimated 225 fewer visitors would have the chance to ride the sleighs, view elk at close range, and to be educated about elk and wildlife conservation. Furthermore, each day that the sleigh rides are not operated results in a loss of an estimated \$3,000 to the sleigh rider operator, NER, and the National Museum of Wildlife Art, including an estimated \$1,800 loss to the sleigh ride operator. These costs are not recoverable. During the last five years, an average of 24,367 people participated in sleigh rides each winter. If elk are disturbed on feeding areas due to vaccination procedures to the extent that they leave the area, changes would be made to vaccination procedures to ensure it does not continue. Therefore, impacts on sleigh ride operations would be minor.

If elk are alarmed on the Nowlin feeding area, due to vaccination activities, while horse-drawn sleighs are in the vicinity of the elk, horses could panic in turn, which is a safety issue for visitors.

Cumulative Effects. The proposed use would not contribute or add measurably to the degradation of habitat or disease risks caused by related programs such as winter feeding on the NER. Therefore, the cumulative effects of the proposed use would be negligible.

Public Review and Comment:

Public review of the draft compatibility determination will coincide with public review of the accompanying environmental assessment, and a summary of related comments and how they were addressed will be included in this section of the final compatibility determination.

The draft compatibility determination (and environmental assessment) was distributed for a 30-day public review on December 9, 2002. It was sent to more than 800 people, organizations, governing bodies, and agencies, including those on the mailing list for the NER and GTNP bison and elk management plan EIS project. A news release announcing the availability of the draft compatibility determination (and environmental assessment) was faxed to the media throughout Wyoming and articles announcing their availability were published in several newspapers. Public comments were accepted during a 30-day comment period which ended on January 15, 2003.

Comment letters were received from 305 people (individuals) and 13 non-governmental organizations. Of the 305 individuals, 303 opposed the proposed use and the opinions of two individuals could not be accurately ascertained. Of the 12 non-governmental organizations, two supported the proposed use and 10 opposed it (one of the non-governmental organizations supporting the proposed use did so with strong reservations). Comment letters received from the WGFD and Wyoming Livestock Board noted their support for the proposed use and identified concerns about the draft compatibility determination. Their comments and responses to them are provided in a document entitled "Public Comment Analysis for the Environmental Assessment for the Implementation of Wyoming Game and Fish Department's Proposed Interim Vaccination Program for Elk on the National Elk Refuge, Teton County, Wyoming." A copy of the public comment analysis can be obtained by calling or writing the National Elk Refuge at (307) 733-9212; P.O. Box 510, Jackson, Wyoming 83001; or bison/elk_planning@fws.gov.

Determination:

This use has been found compatible/not compatible.

Stipulations Necessary to Ensure Compatibility:

The following stipulations would allow the proposed use to be compatible from the standpoint of direct and short-term effects on the ability of the USFWS to fulfill the NWRS mission and the purposes of the refuge.

- Elk vaccination teams will monitor and record response to vaccination procedures daily. Likewise, feed truck drivers will monitor elk behavior as is standard protocol at the NER. Observations of both groups will be used to make adjustments to avoid major adverse effects on elk, other wildlife, and opportunities for wildlife-dependent recreation.
- After a few days of acclimation, if elk repeatedly rush away from feedlines each time the airgun is fired, even if they return shortly, changes to vaccination procedures would be required to remedy this problem (see possible corrective actions below). Occasional reactions of elk resulting in them rushing away from the feedline would be acceptable.
- If, while vaccination activities are occurring, elk leave a feeding area and do not return until the next day or move to another feeding area, changes would be made to vaccination procedures to avoid recurrence of this response (see possible corrective actions below). If attempts to correct the problem do not prevent elk from leaving feeding areas, the vaccination program would be discontinued at the feeding sites where this is occurring.
- If, while vaccination activities are occurring, interactions between elk or between elk and bison increase above interactions of past years, and if interactions lead to injuries or death, changes would be made to vaccination procedures to avoid recurrence of this response (see possible corrective actions below). If attempts to correct the problem do not prevent further serious injuries or death, the vaccination program would be discontinued.
- Winter feeding operations would not be altered to any measurable degree to accommodate the proposed use, as the feeding program has evolved over the last 30 years to minimize adverse interactions among elk. This includes no significant increases in the amount of time spent

dispensing pellets. Changes in the way alfalfa pellets are dispensed could result in increased interactions, which could lead to injuries and death of elk.

- The decision to initiate winter feeding would not be influenced by the proposed use. If the criteria upon which the decision is made (USFWS and WGFD 1974) dictate that feeding is not needed in a given year, feeding would not be initiated for the purpose of allowing vaccination to occur. On average, winter feeding has occurred 9 of 10 years since 1912, and it has occurred each of the last 20 years.
- Hay would not be used.

Possible Corrective Actions (a nonexclusive list)

- Reduce the amount of time that the WGFD vaccination team is on a particular feed site.
- More closely observing animal behavior and either halting acclimation/vaccination temporarily until any escalating response subsides or terminating activities before behavioral responses escalates.
- Reinitiate acclimation procedures for a period of time.
- Temporary cessation of acclimation or vaccination activities on one or more feeding sites for one or more days to allow the USFWS to redistribute elk in order to attain desired (e.g., pre-disturbance) numbers of elk at each feeding site.

If attempts to correct the problem do not prevent major adverse impacts, as described above, the interim vaccination program would be discontinued at the feeding sites where this is occurring.

Justification:

The proposed use was determined to be compatible for the following reasons. The potential effects of the proposed vaccination program, to be implemented for an anticipated 3 years, would result in negligible to minor direct and indirect effects on elk and other wildlife and opportunities for wildlife-dependent recreation. Any effects of the proposed use (both beneficial and adverse) would be so slight that they would not be measurable, assuming adherence to the stipulations identified above. Therefore, while it would not contribute to the accomplishment of refuge purposes or the mission of the NWRS, vaccinating elk on the NER for a short period would not hinder their accomplishment.

Although vaccination of elk, under current technologies, can only be effectively undertaken when elk are concentrated through a winter feeding program (Thorne and Kreeger 2002, WGFD 2002), implementation of the proposed use for an estimated 3 years would not have any influence on the continuation of winter feeding during this period. Therefore, although winter feeding is a prerequisite of the proposed use and although winter feeding has resulted in adverse impacts to wildlife habitat (Anderson 2002, Cole 2002, Dobkin et al. 2002) and disease prevalence and risk (Thorne et al. 1978, 1997; Smith 2001) on the NER, implementing the proposed use for the next 3 years would not be responsible, in whole or in part, for perpetuating these effects because (1) winter feeding would continue to be carried out for the next few years regardless of whether vaccination occurs, and (2) the proposed use would not worsen, to any measurable degree, any of the adverse effects associated with winter feeding.

The long-term effects of Strain 19 vaccination, cumulative with the effects of long-term winter feeding and other management activities, are being evaluated in the BEMP EIS. While the USFWS recognizes the concern by some stakeholders that implementation of a short-term Strain 19 vaccination program on the NER will greatly increase the chances that Strain 19 vaccination and an accompanying winter feeding program will be selected for implementation in the BEMP EIS process (as explained in the environmental assessment), the USFWS is committed to ensuring that the implementation of the proposed use for the next 2-3 years will have no bearing on the decision in the

BEMP EIS, other than providing additional information to make an informed decision. Furthermore, whereas the proposed use examined in this compatibility determination was not designed or intended to contribute to NER elk management goals or objectives, disease management strategies in the forthcoming bison and elk management plan for the NER and GTNP will be aimed specifically at meeting goals of the NER and GTNP. In the BEMP EIS, the USFWS is committed to evaluating Strain 19 vaccination (and other potential brucellosis control measures) in the context of a comprehensive and integrated program that will, with respect to disease management, address all existing and potential future diseases of elk inhabiting the NER and in the context of addressing the underlying factors that perpetuate brucellosis (and other diseases) in NER elk and bison.

USFWS policy requires that compatibility be based on “sound professional judgement,” meaning that determinations must be consistent with “sound fish and wildlife management.” However, in making compatibility determinations, the consideration of sound professional judgement and consistency with sound wildlife management is narrowly limited to the determination of whether a proposed use would or would not “materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge” (16 USC 668ee). The determination of compatibility in this document is consistent with sound wildlife management, as is demonstrated in the analysis of impacts in this compatibility determination and the environmental assessment.

Compatibility Determination

Mandatory Re-Evaluation Date (provide month and year for “allowed” uses only):

_____ Mandatory 15-year Re-Evaluation Date (for priority public uses)

n/a* Mandatory 10-year Re-Evaluation Date (for all uses other than priority public uses)

* The proposed use will be implemented for less than 3 years or less.

NEPA Compliance for Refuge Use Decision (check one below):

___ Categorical Exclusion without Environmental Action Statement

___ Categorical Exclusion and Environmental Action Statement

X Environmental Assessment and Finding of No Significant Impact

___ Environmental Impact Statement and Record of Decision

Determination

Prepared by:

(Signature)

(Date)

Regional Director:

(Signature)

(Date)

Concurrence

Refuge Supervisor:

(Signature)

(Date)

**Regional Chief,
National Wildlife
Refuge System:**

(Signature)

(Date)

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